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Authors

Guan, Y

Deák, GO

Huangfu, B

et al.

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Perspective-taking and gift-giving in Chinese preschool children

Yao Guan[1,2] | Gedeon O. Deák[3] | Baihui Huangfu[1] | Zhan Xu[1]

[1]Faculty of Psychology, Southwest University, Chongqing, China

[2]Department of Psychology, University of Florida, Gainesville, Florida

[3]Department of Cognitive Science, University of California, San Diego, San Diego, California

Correspondence
Zhan Xu, Faculty of Psychology, Southwest University, No. 2 Tiansheng Road, Beibei, Chongqing 400715, China.
Email: xuzhan@swu.edu.cn

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Abstract

This study explored Chinese preschool children's perspective-taking via a gift-giving paradigm. Unlike findings with North American children (Atance et al. in, Dev Psychol 46:1505–1513, 2010), the results from two experiments ($N_{Exp.\ 1}$ = 329; $N_{Exp.\ 2}$ = 112) showed that allowing Chinese children to first choose a desired object for themselves did not enhance their subsequent perspective-taking performance in gift selection or gift justifications. This was true regardless of gift type (consumable or recreational items) or of recipient (mom, teacher, experimenter, or friend). In addition, children's perspective-taking did not correlate with their performances in behavioral inhibition and delay of gratification tasks. These results suggest the possibility that the prior desire fulfillment effect varies with children's socio-cultural experiences. Finally, Chinese children showed better perspective-taking in choosing consumable gifts (e.g., drinks, snacks) than recreational gifts (e.g., toys, magazines), although this effect was not found for gift selection in Experiment 2. One interpretation of these results is that children's capacity for prosocial perspective-taking is influenced by socio-cultural experiences and social knowledge about individuals' preferences for different kinds of objects.

KEYWORDS
cross-cultural, executive function, moral development, perspective-taking, prosocial behaviour

1 | INTRODUCTION

A child's ability to understand that different people can have different desires and preferences is a fundamental aspect of perspective-taking and of social-cognitive development more generally. A natural social task that benefits from understanding others' desires is *gift-giving*. Ideally, a gift-giver reasons about recipients' needs, tastes, and preferences, and possibly ignores his or her own conflicting desires. Gift-giving is therefore a culturally widespread context for assessing *perspective-taking*, defined as the ability to think about another's hypothetical perceptual, cognitive, or emotional states (Farrant, Devine, Maybery, & Fletcher, 2012). In a study of perspective-taking in gift choices, Atance, Bélanger, and Meltzoff (2010) asked Canadian preschool children to choose between a stuffed animal and a magazine as a gift for themselves or for their mothers. Compared to 5-year olds, 3- and 4-year olds less often chose the age-appropriate gift (i.e., magazine) for their mother. In addition, the study reported a *prior desire fulfillment effect*: children were more likely to choose an appropriate gift for their mother if their own desire was fulfilled first (choosing a gift for themselves first), or expected to be fulfilled (knowing they would be able to choose a gift for themselves ahead of time). This effect was supported by children's verbal justifications. The authors hypothesized that this prior fulfillment effect results from young children's limited cognitive resources: A desired but unattained object might preoccupy young children's cognitive resources. Fulfilling their desire allows them to allocate cognitive resources to represent others' preferences, thereby facilitating perspective-taking.

The present study aimed to explore perspective-taking in Chinese preschool children, an under-studied population (Nielsen, Haun, Kärtner, & Legare, 2017). We focused on two questions: (a) Will the prior desire fulfillment effect (Atance et al., 2010) generalize to Chinese children? (b) Is perspective-taking development stimulus-specific? That is, do children take others' perspective more readily with some kinds of gifts (e.g., consumable goods) than others (e.g., recreational items like toys or books)? If so, does this depend on their knowledge of the others' preferences? Answering these questions could provide context for interpreting results from Western population samples, and shed light on the cultural basis of perspective-taking and prosocial development.

Our first goal was to investigate perspective-taking and gift-giving in Chinese preschool children. Perspective-taking, among other social-cognitive skills, has been much less studied in this population than in their peers in Western cultures (Nielsen et al., 2017). This discrepancy is problematic because evidence shows that a wide range of psychological and behavioral results from WEIRD (Western, Educated, Industrialized, Rich, and Democratic) samples do not generalize to other populations (Henrich, Heine, & Norenzayan, 2010). This fact, together with the different socio-cultural values and practices in China (e.g., collectivistic and interdependent vs. individualistic and independent; Greenfield, Keller, Fuligni, & Maynard, 2003; Kessler, Cao, O'Shea, & Wang, 2014) and differences in cognitive development of Chinese children (e.g., executive function; Sabbagh, Xu, Carlson, Moses, & Lee, 2006), makes it uncertain whether a perspective-taking effect found in Western children (i.e., prior desire fulfillment; Atance et al., 2010) will replicate in Chinese children.

Socio-cultural factors influence perspective-taking and its development in profound and complicated ways (Greenfield et al., 2003; Wu & Keysar, 2007). Cross-cultural comparisons of adults show that perspective-taking is culture-dependent. For example, in a perspective-taking task, Chinese adults showed an other-oriented bias whereas European adults showed an egocentric bias (Kessler et al., 2014). In an interactive communication game, Chinese adults had better perspective-taking performance on average than American adults (Wu & Keysar, 2007). The authors interpreted this as an effect of culture, arguing that the collectivistic and interdependent emphasis of Chinese culture facilitates perspective-taking more than the individualistic and independent emphasis of Western culture (also see Luk, Xiao, & Cheung, 2012). These results imply broad differences between Chinese (collectivistic and interdependent) and Western culture (individualistic and independent) contribute to perspective-taking differences. In the child literature, the distinction between “interdependent” and “independent” socialization is described as “two deeply different cultural pathways through development” (Greenfield et al., 2003, p. 461). The two pathways have different emphases, with the former focusing on “social context” and the latter focusing on “individual psyche” (Fiske, Kitayama, Markus, & Nisbett, 1998; Vinden & Astington, 2000). Evidence has shown

that these two different pathways lead to cross-cultural differences in the developmental trajectory of theory of mind, from mentalistic words acquisitions (Vinden, 1999; Wellman, 1990) to everyday social explanation (Miller, 1984). Thus, it is unclear whether the prior desire fulfillment effect found in Western children (Atance et al., 2010) will generalize to Chinese children.

In addition to the socio-cultural factors, cognitive abilities including executive functions (EF) have been proposed to contribute to the development of perspective-taking (Sabbagh et al., 2006). Evidence has shown that Chinese children perform better than Western children on EF tasks (Guan & Farrar, 2016; Sabbagh et al., 2006). Given the importance of EF in perspective-taking and the trajectory of EF development differs in Chinese and Western children, it is uncertain whether the perspective-taking results from Western children will replicate in Chinese children. Thus, the primary goal of the present study was to examine the cross-cultural generalizability of the prior fulfillment effect. The results would help lay the groundwork for understanding cross-cultural similarities and differences in perspective-taking.

Our second goal was to explore whether or not perspective-taking development is stimulus-specific. Atance et al. (2010) had children choose either stuffed animals or magazines as gifts. This tested a choice between two particular recreational objects—items designed for entertainment or fun. It is unclear whether the results can be generalized to other gift choices. For example, consumable (e.g., food) objects might elicit different kinds of desire reasoning from recreational objects, since the two are related to different social situations. In addition, children arguably have different experience observing people's recreational object and food choices. For example, they likely see other children frequently make varied choices of playing objects, but perhaps less commonly see other children make explicit choices of what to eat or drink. Conversely, they might hear adults talk about food likes and dislikes, and thus learn about individual food preferences. Such experiences regarding different individuals' evaluations of specific recreational and consumable items might affect children's reasoning about individual preferences for these types of items. However, few studies have compared children's perspective-taking choices for different types of gifts. Some studies have focused on consumable gifts (e.g., Cassidy, 1998; Siegal & Peterson, 1998), and others focused on recreational gifts (e.g., Moore et al., 1995). Cassidy et al. (2005) found no differences in children's perspective-taking for recreational (i.e., stickers) versus consumable (i.e., food) gift choices. However, their task was a hypothetical story paradigm involving pretend recipients, not a choice of real objects for real people. Such a paradigm might have muted any effects of materials, as well as effects of inhibitory control of the children's own preferences. In addition, Cassidy et al. (2005) did not ask children for justifications. In children three years and older, justifications can disambiguate responses in forced-choice paradigms (see Atance et al., 2010; Eisenberg, Murray, & Hite, 1982). For example, justifications can indicate that a child is consciously alluding to a recipient's preferences (e.g., "Mommy likes those!"), or is simply choosing the most salient (or appealing) item (saying, e.g., "It's yummy!"), or is making inattentive or haphazard choices with no coherent rationale.

In the present study, typically developing Chinese preschool children made several choices of both recreational (e.g., toy) and consumable (e.g., drink) gifts. To test whether children's own desires interfered with perspective-taking choices, we randomly assigned participants to either a *fulfilled* group that first chose a gift for themselves, or an *unfulfilled* group that first chose gifts for others. To test the generalizability of the results, children chose gifts for two adult recipients (i.e., mother, and an experimenter or teacher) and a child recipient (i.e., best friend). To disambiguate the gift choices, we asked children to justify their choices. We controlled children's knowledge of the recipients' desires (Level 1 perspective-taking), which is a prerequisite for evaluating Level 2 perspective-taking reasoning (Flavell, Everett, Croft, & Flavell, 1981). In this context, Level 2 perspective-taking refers to the ability to understand that others' desires may differ from one's own (Flavell et al., 1981) and use the representation of those different desires to choose gifts. Alternately, errors might result from a simpler failure of *Level 1 perspective-taking* (Flavell et al., 1981)—that is, ignorance of another's desires. If children do not know what a recipient prefers, they cannot make a perspective-taking choice. They might choose the recipient's preferred item by luck or chance, but this would not reflect mature perspective-taking. Experiment 1 adopted a sorting task from Atance et al. (2010) to reduce this confound: children sorted a set of objects into child-preferred or

adult-preferred items. This task evaluates children's general knowledge of child- versus adult-appropriate items. Experiment 2 added a pretest of children's knowledge of each recipient's specific preferences, in addition to the sorting task, for a stronger assessment of children's ability to infer another's preferences.

2 | EXPERIMENT 1

In Experiment 1 we examined the prior desire fulfillment effect in a sample of Chinese preschool children. We predicted that perspective-taking development is culture-dependent: the prior desire fulfillment effect found in North American population samples might be weaker or absent in Chinese children. We also evaluated perspective-taking for different type of gifts (consumable vs. recreational). In addition, we tested whether perspective-taking results generalize across recipients with different relationships to the child.

2.1 | Method

2.1.1 | Participants

A convenience sample of 329 Mandarin-speaking children aged 3:2–5:10 (years: months) was recruited from urban middle-class preschools in Chongqing and Qingdao, China. All children had age-appropriate cognitive and language skills, according to their teachers' reports. Criteria for inclusion in the final sample included passing a sorting task, and choosing an age-appropriate gift for themselves in the gift-giving task. Of 329 children, 287 passed the sorting task and 235 also chose an appropriate item for themselves (see Table 1). These 235 children included 80 three-year olds (*M* = 3:6, range 3:2–3:11, 35 boys), 95 four-year olds (*M* = 4:7, 4:0–4:11, 33 boys), and 60 five-year olds (*M* = 5:5, 5:0–5:10, 35 boys).

2.1.2 | Materials

Consumable gifts included four containers of shuangwaiwai child yogurt beverages and four cans of beer. Shuangwaiwai is packaged in a toy-like bottle and is popular among Chinese children; adults do not drink it. Beer, an adult-desired item, is a local favorite in Chongqing and Qingdao. Young children regularly see adults (but not children) drink from the kind of beer cans we used. Recreational gifts included four stuffed rabbits (yellow for girls, blue for boys) and four magazines (*Duzhe*, a popular Chinese magazine for adults akin to *Readers Digest* or *The*

TABLE 1 Numbers of participants meeting one or both inclusion criteria in Experiments 1 and 2

Experiment and Sample Criterion	3-year-olds	4-year-olds	5-year-olds	Total
Experiment 1				
All participants	133	126	70	329
Passed sorting task	99	118	70	287
Passed sorting + Chose child-item for self	80 (60%)	95 (75%)	60 (86%)	235 (71%)
Experiment 2				
All participants	28	53	31	112
Passed sorting task	18	52	29	99
Passed sorting + Chose child-item for self	14 (50%)	39 (74%)	23 (74%)	76 (68%)

Note: Bottom row for each experiment shows the numbers and percentages out of all enrolled children (for each age group, and total) who met both criteria and were included in analyses.

Atlantic). The sorting task used 12 culturally appropriate items: six adult-associated (purse, fountain pen, calculator, coffee, cigarettes, and newspaper) and six child-associated items (school pencil box, crayons, modeling clay, *wangzai* child snack, lollipop, and cartoon stickers).

2.1.3 | Procedure

A female experimenter tested children individually in their preschools. Instructions were administered in a dialect most familiar to the child. Children completed the gift-giving task and then the sorting task.

2.1.4 | Gift-giving task

Following Atance et al.'s (2010; Experiment 2) paradigm, we asked children to choose gifts and provide verbal justifications for their choices. We did not include the anticipated desire condition from Atance et al.'s Experiment 2, and we added a new category of experimental materials (i.e., consumable) and two target recipients (i.e., experimenter and child's best friend). We randomly assigned participants to one of the four conditions: (a) *Fulfilled*, *Recreational*. An experimenter presented and labeled four magazines and four stuffed rabbits. Children need to choose between magazines and stuffed rabbits first for themselves, then for their mother, best friend, and experimenter, with the last three in a counterbalanced order (using a Latin Square design). We counterbalanced the items' order-of-mention and position on the table. After each choice the experimenter asked "Why?". If participants did not respond within 10 s, the experimenter repeated and elaborated the question (e.g., "Why did you choose [magazine/rabbits]?"). (b) *Fulfilled*, *Consumable*. This condition used the same procedure as the first condition except that children chose between four beers and four yogurts. (c) *Unfulfilled*, *Recreational*. This condition used the same materials as the first condition except that children chose gifts for others (mother, best friend, and experimenter; order counterbalanced) before choosing for themselves. (d) *Unfulfilled*, *Consumable*. This condition used the same procedure as the third condition except that children chose between beers and yogurts. For all conditions, children received one point for each age-appropriate gift choice (i.e., rabbit/yogurt for friend; magazine/beer for mother or experimenter), and zero points for each age-inappropriate choice (i.e., rabbit/yogurt for adults; magazine/beer for friend). Children also provided a justification after each choice. Children's justifications for other recipients' gift choice were classified into one of four categories: (a) *Self-perspective* justifications referred to themselves (e.g., "I want it"; "I like it"), or to a social group that included the children themselves but not the recipient (e.g., "Boys like it"). (b) *Other-perspective* justifications referred to the recipient (e.g., "Mom will like it"; "My best friend likes drinking yogurt") or to a social group that selectively included the recipient (e.g., "Magazines are for grown-ups"; "Kids like these"). (c) *Ambiguous* justifications referred to object properties not specifically related to either self or the recipient (e.g., "it's nice"; "it's pretty"), or referred to recipient characteristics unrelated to the gifts (e.g., "Mom is pretty"), or referred to the relationship between self and the recipient (e.g., "Mom likes me"; "He's my good friend"), or to social norms (e.g., "Beers are for adults"; "Kids cannot drink beers"). (d) *Irrelevant or insufficient* responses included simply naming the object or off-task comments (e.g., "It's different from the others"; "I don't know"). The first two authors independently classified children's justifications into these four categories. Inter-coder agreement, by Cohen's Kappa, was $\kappa = 0.87$ for mother trials, 0.90 for experimenter trials, and 0.93 for friend trials. We excluded Ambiguous and Irrelevant or Insufficient justifications from statistical analyses. Children received zero points for self-perspective justification and one point for other-perspective justification.

2.1.5 | Sorting task

The procedure closely followed Atance et al. (2010; Experiment 2). We placed two plastic boxes on the table: one with a picture of an adult female (described as "for grown-ups' things"), and the other with a picture of a child ("for kids' things"). The order and position of the box were counterbalanced across participants. An experimenter first

demonstrated the task using a purse and a school pencil box and then showed children five pairs of labeled items (in random order), one pair at a time with each pair including a child item and an adult item. Children needed to sort the adult item in the adult box and the child item in the child box. Each age-appropriate sort gained one point (score range: 0–10).

2.2 | Results

To screen children for knowledge of adult- versus child-appropriate gifts, we adopted Atance et al.'s (2010) selection criterion of ≥8 out of 10 correct in the sorting task. Using this criterion we excluded 34 three-year olds (26%) and 8 four-year olds (6%) from subsequent analyses. We conducted the chi-square test to explore effects of gender, age, prior fulfillment, and gift type on children's gift choices and justifications in the gift-giving task. The results revealed no effect of gender (appropriate gift-choices: girls = 71% vs. boys = 76%; other-perspective justifications: girls = 55% vs. boys = 51%), age, or prior desire fulfillment (Table 2), all *p*s >.05. On the other hand, a reliable gift type (recreational or consumable) effect on gift choices was found: Children chose more appropriate consumable than recreational gifts for all three recipients: mother, χ^2 (1, *N* = 235) = 9.75, *p* = .002, experimenter, χ^2 (1, *N* = 235) = 6.06, *p* = .014, and friend, χ^2 (1, *N* = 235) = 4.98, *p* = .026 (Figure 1). Chi-square analyses of justifications showed the same gift type effect for both adults recipients: mother, χ^2 (1, *N* = 134) = 4.09, *p* = .043, and experimenter, χ^2 (1, *N* = 88) = 5.15, *p* = .023, and a marginally significant effect for friend: χ^2 (1, *N* = 120) = 3.77, *p* = .052 (Figure 2).

2.3 | Discussion

Age and prior desire fulfillment did not predict children's gift choices or justifications. Although the absence of an age effect might seem surprising, note that we excluded a larger proportion of 3-year olds than 4- and 5-year olds (26% vs. 6% and 0%) based on the sorting task. Because that criterion also probably selects for language comprehension and attentiveness, children with less mature verbal and EF skills, who will typically be younger,

TABLE 2 Percentage of children's appropriate choices and justifications for others as a function of age and desire fulfillment in the current study and the Atance et al. (2010) study

		3-year olds	4-year olds	5-year olds
Current study (Experiment 1; Experiment 2)				
Gift selection	fulfilled	69%; 75%	77%; 76%	75%; 92%
	unfulfilled	64%; 73%	72%; 81%	67%; 85%
Justification	fulfilled	90%; 96%	93%; 83%	81%; 76%
	unfulfilled	90%; 83%	75%; 73%	80%; 87%
Atance et al. study Experiment 1				
Gift selection	fulfilled & unfulfilled	61%	50%	94%
Atance et al. study Experiment 2				
Gift selection	fulfilled	63%	88%	88%
	unfulfilled	13%	57%	71%

Note: Percentage of appropriate choices = total appropriate choices for mom, friend, experimenter/teacher/(total appropriate choices + total inappropriate choices); Percentage of appropriate justifications = total appropriate justifications for mom, friend, experimenter/teacher/(total other-perspective justifications + total self-perspective justifications). Following the Atance et al. study, we didn't include *irrelevant* and *ambiguous* justifications in the analysis. For each target recipient in current study, children made 68% and 93%, 63% and 81%, 82% and 81% appropriate choices and justifications for mom, experimenter, and friend respectively in Experiment 1; in Experiment 2 children made 81% and 87%, 78% and 79%, 82% and 77% appropriate choices and justifications for mom, teacher, and friend respectively.

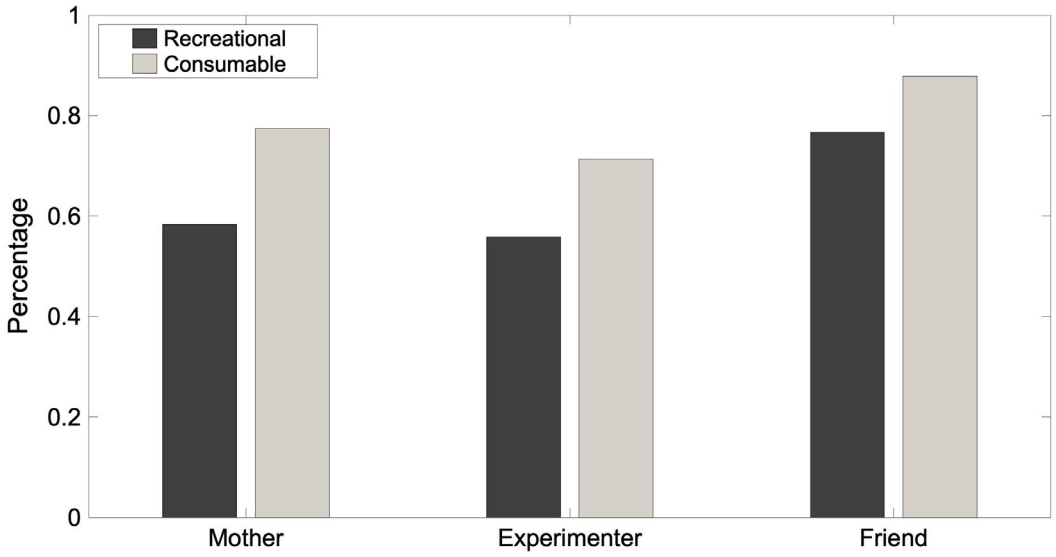

FIGURE 1 Percentage of appropriate choices for recreational and consumable gifts for mother, experimenter, and friend in Experiment 1. Appropriate choices: adult-typical items for adult recipients (i.e., mother and experimenter); child-typical items for child recipient (i.e., friend)

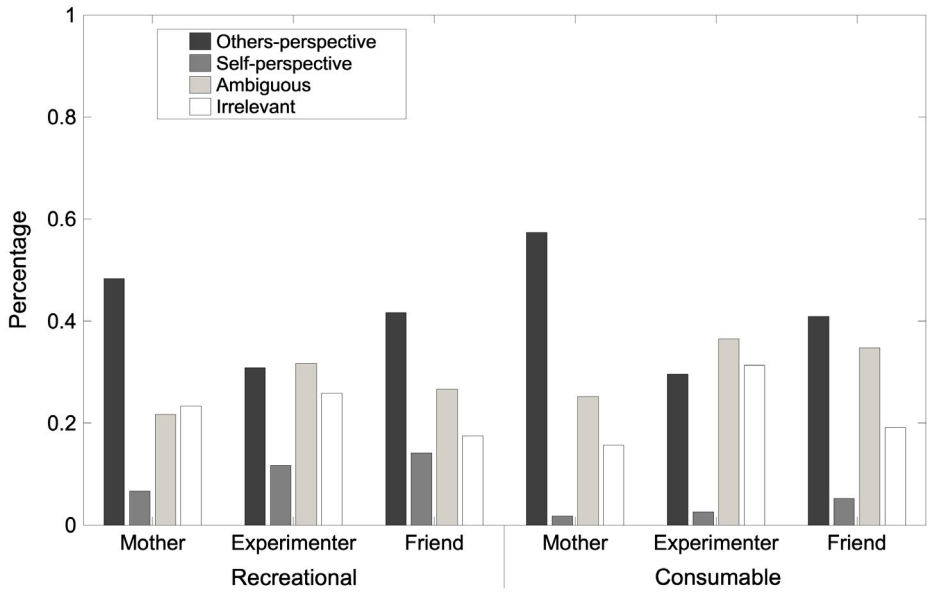

FIGURE 2 Percentage of each justification category for each gift type in Experiment 1

are more likely to be excluded. Thus, the selection criteria, though necessary to rigorously evaluate advanced or Level 2 perspective-taking (Flavell et al., 1981), likely attenuated age differences. If true, this implies that age differences in previous studies might have confounded differences in Level 1 (i.e., knowledge/non-specific) perspective-taking and Level 2 perspective-taking, and potentially verbal and cognitive control abilities. The lack of

a prior desire fulfillment main effect or interaction in Chinese children suggests that the effect reported from the North American children (Atance et al., 2010) might be culture-bound. This result is consistent with the evidence of cultural differences in other aspects of children's social understanding (Miller, 1984; Vinden, 1999) and the evidence that participants from the WEIRD societies are among the least representative populations for the findings to generalize to other populations (Henrich et al., 2010). This null result with Chinese children could be due to procedural differences between the studies; however, it might also be due to the socio-cultural and the cognitive factors (e.g., EF) reviewed above. In Experiment 2 we measured Chinese children's EF ability and explored its relation to perspective-taking.

Results from gift choices and justifications indicate that children took a recipient's perspective for consumable gifts more than recreational gifts, regardless of recipients (i.e., mother, experimenter, or friend). This suggests that children's perspective-taking is fairly category specific. Three possible reasons could contribute to this consumable gift advantage: (a) Foods are related to basic physiological needs; (b) children are more attentive to individuals' consumptive behaviors because that information might, under extreme conditions, confer a survival advantage; and (c) these consumable items are intrinsic to everyday social routines (i.e., meals) when children have opportunities to notice individuals' different food and drink preferences. These factors might make individual preferences for consumable items relatively more salient to children. By contrast, recreational items arguably serve less essential functions, and children might see adults using recreational items less regularly than they see adults eating, limiting children's information about individual recreational preferences. Any of these factors might make it easier for children to choose other-preferred consumable gifts than recreational gifts.

3 | EXPERIMENT 2

Experiment 2 aimed to replicate and extend the findings on the prior desire fulfillment and the gift type in Experiment 1. We added a desire-knowledge pretest to assess children's knowledge of which specific items they believed each recipient likes. This complements the sorting task, which assesses children's general knowledge of adult versus child-stereotypical preferences, but not their specific knowledge of individuals' preferences. For example, if a child believes that her mother prefers a child-appropriate item (e.g., shuangwaiwai), then choosing the child item might reflect perspective-taking rather than egocentrism.

To explore whether Chinese children's more advanced EF contributes to their gift-giving perspective-taking, we included two EF tests that require inhibition: Mischel's delay-of-gratification test (Mischel & Mischel, 1983) and Luria's tapping test (Luria, 1966). The former assesses control over impulsive behavior, given a motivational conflict (Hongwanishkul, Happaney, Lee, & Zelazo, 2005): children need to inhibit the impulse to take an immediate but small reward so that they can obtain a larger reward later. The tapping test requires children to inhibit a prepotent tendency to copy an adult's action, but does not entail suppression of a desire (Diamond & Taylor, 1996).

3.1 | Method

3.1.1 | Participants

A convenience sample of 112 Mandarin-speaking children aged 3–5 years was recruited from urban middle-class preschools in Chongqing, China. Of these, 99 children met criterion in the sorting task (≥8 correct). Of those, 76 children chose age-appropriate gifts for themselves (Table 1). The remaining children's data were analyzed; they included 14 three-year olds (M_{age} = 3:8, range 3:4–3:10, 9 boys), 39 four-year olds (M_{age} = 4:6, 4:0–4:11, 20 boys), and 23 five-year olds (M_{age} = 5:7, 5:3–5:11, 7 boys).

3.1.2 | Materials

The desire-knowledge pretest included two sets of laminated photographs of 12 consumable and 12 recreational items. Each set included six child-appropriate items per category (consumables: candy, lollipops, yili child strawberry milk, shuangwaiwai child yogurt, wangzai child snack, and xizhiliang child jelly; recreational: toy Ultraman, toy car, xiyangyang child picture book, crayons, doll, and stuffed rabbit) and six adult-appropriate items per category (consumables: beer, spicy bean snack, spicy beef snack, spicy chicken snack, coffee, and green tea; recreational: badminton birdie-ball, ladies handbag, magazine, mahjong piece, novel, and smart phone). Materials for the gift-giving task were individualized based on children's choices in the desire-knowledge pretest. To exclude item deficiency as a confounding factor we prepared four of each item in the gift-giving task, since there were four gift recipients, participants themselves included. Sorting task materials were the same as Experiment 1. The delay of gratification task used colored pencils. We chose color pencils instead of marshmallows based on teachers' and parents' recommendations and evidence that showed no effect of specific reward (e.g., stickers, pennies, or candies) on children's delay of gratification (Prencipe & Zelazo, 2005).

3.1.3 | Procedure

Children completed the desire-knowledge pretest in one session, and 1–2 days later they completed the gift-giving task, sorting task, and two inhibition tasks in another session.

3.1.4 | Desire-knowledge pretest

We showed children two sets of 12 photographs of consumable and recreational items, one at a time, and asked them to label each item to ensure that children could identify them. Children then identified the first and second favorite items for themselves, their mom, teacher, and best friend. They also identified their least favorite item(s); these items were omitted from the gift-giving task so that the task would not be simplified by including items that the child believes a recipient dislikes. Choice order was counterbalanced across children. For each recipient all of the photographs were displayed in a random arrangement. This pretest ensured that each gift-giving trial imposed a conflict between the child's own preference and the recipient's preference, as the child represents it. If an item was preferred by both the child and the recipient, or if the participant chose an age-inappropriate preferred item, a different preferred item would be used instead. By tailoring test items to children's specific knowledge of each recipient's preferences, this task eliminates a confound in previous studies: egocentric choices due to Level 1 failure (i.e., not knowing the recipient's specific preference) rather than Level 2 intersubjective perspective-taking failure (i.e., choosing a self-preferred gift despite of knowing the recipient's specific preference).

3.1.5 | Gift-giving task

We used the gift-giving task from Experiment 1, with four modifications. First, materials used were individualized for participants based on their own choices in the desire-knowledge pretest. Second, every child chose both consumable and recreational gifts, in order to allow within-participant comparison of gift type and to increase statistical power to estimate each child's perspective-taking. Thus, each child chose six gifts: three consumable and three recreational. Third, children chose gifts for a familiar teacher instead of an unfamiliar experimenter. This ensured better control of the psychological (all familiar) and physical (all absent during testing) distance of the gift recipients to the children. Finally, to minimize uninformative justifications we asked follow-up questions to ambiguous or irrelevant responses (e.g., “Why did you choose the stuffed animal? Is it because you like it, or because mom likes it?”).

3.1.6 | Sorting task

We used the same sorting task as Experiment 1.

3.1.7 | Tapping game

Based on Luria's tapping game (Diamond & Taylor, 1996; Luria, 1966), children needed to follow the experimenter's action—tapping once or twice—by performing the other action. This requires rule-governed inhibition of a prepotent action (i.e., imitating the experimenter). First we explained and demonstrated two rules to the child: Tap twice after the experimenter taps once, and tap once after two taps. Then the child attempted it and was praised (if correct) or corrected (with another demonstration). The child's first correct practice trial response for each rule counted as the first two test trials. Subsequently, the child completed a pseudorandom series of 12 test trials without feedback.

3.1.8 | Delay of gratification task

Following Mischel and Mischel (1983) children saw two reward that differed in desirability (verified by pretest): one colored pencil and two colored pencils. The experimenter explained that she would leave the room, and the child could receive two pencils by waiting until she returned; otherwise, the child could knock on the door to call back the experimenter, but then they would receive only one pencil. After confirming that the child understood the rules, the experimenter left and returned either when the child knocked on the door or after 10 min. The dependent measure was the time until the child knocked on the door (range: 1–600 s).

3.2 | Results

We conducted multilevel logistic regressions to assess the effects of gender, age, prior desire fulfillment, and gift-type on children's gift-choices and justifications, respectively. The results showed that only gender and age predicted gift choices. Girls made more perspective-taking choices than boys (87% vs. 74%), B = −0.71, *SE* = 0.32, z = −2.18, *p* = .029. Older children also made more perspective-taking choices (3-, 4-, and 5-year olds: 74%, 78%, and 90%, respectively), B = 0.46, *SE* = 0.21, z = 2.18, *p* = .030. Follow-up tests revealed that 5-year olds performed better than 3-year olds, B = 0.90, *SE* = 0.44, z = 2.05, *p* = .040.

Unlike Experiment 1, perspective-taking choices of consumable gifts were not reliably higher than recreational gifts (82% vs. 80% for mother, 83% vs. 75% for teacher, and 84% vs. 81% for best friend; Figure 3). However, children made more perspective-taking justifications for consumable than recreational gifts, B = 0.60, *SE* = 0.29, z = 2.09, *p* = .036 (90% vs. 84% for mother, 83% vs. 75% for teacher, 82% vs. 72% for best friend; 85% vs. 77% overall; see Figure 4). Gift-type was however the only significant predictor of perspective-taking justifications.

Descriptive results of the two EF tests are summarized in Table 3. We also calculated partial correlations, controlling for gender and age. There was no reliable correlation between tapping accuracy and either perspective-taking gift-choices, r_p = −.09, *p* = .451, or justifications, r_p = .06, *p* = .605. Similarly, there was no relation between gratification-delay time and either perspective-taking choices, r_p = −.14, *p* = .247, or justifications, r_p = .15, *p* = .201. These results were not due to a celling effect in perspective-taking: among children who showed no ceiling effect (*N* = 48), correlations with tapping accuracy (r_p = −.073) and delay time (r_p = −.103) were non-significant. Finally, although the simple correlation between delay time and tapping accuracy was significant, r_p = .25, *p* = .031, it was not significant when age was partialled out, r_p = .17, *p* = .149.

In addition, we compared our tapping results (*N* = 112, M_{age} = 4:8, 53% girls, $M_{\%\ correct}$ = 84%, $SD_{\%\ correct}$ = 27%) with an age-, gender-, and sample size-matched study of children in the United States (Rhoades, Greenberg, & Domitrovich, 2009; *N* = 146, M_{age} = 4:6, 54% girls, $M_{\%\ correct}$ = 68%, $SD_{\%\ correct}$ = 30%). This is an exploratory comparison; the multiple differences between studies prevent any definitive interpretation. Nevertheless, an independent-samples *t*-test showed that the Chinese sample performed better than the North America sample

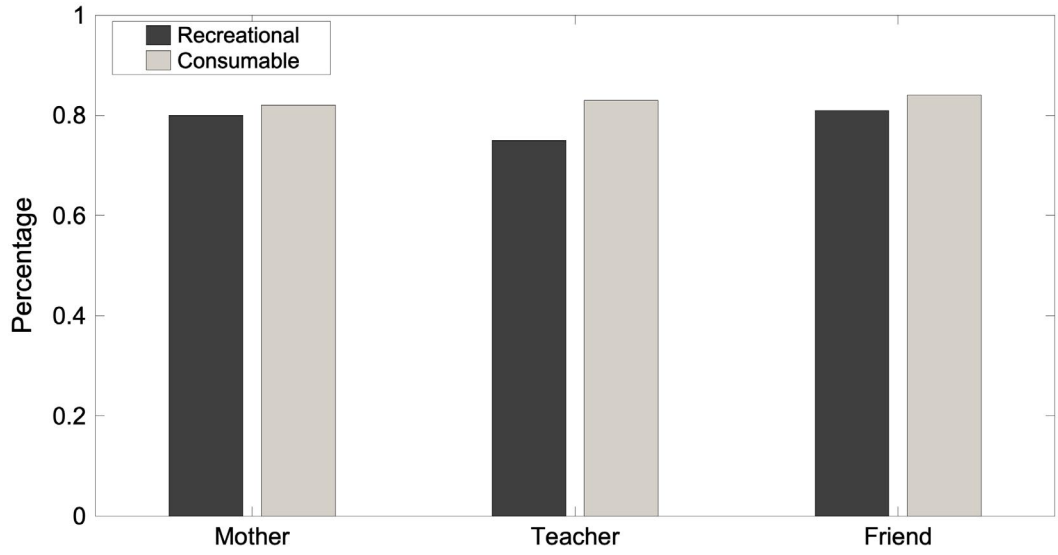

FIGURE 3 Percentage of appropriate choices, by gift-recipient, for each gift type in Experiment 2

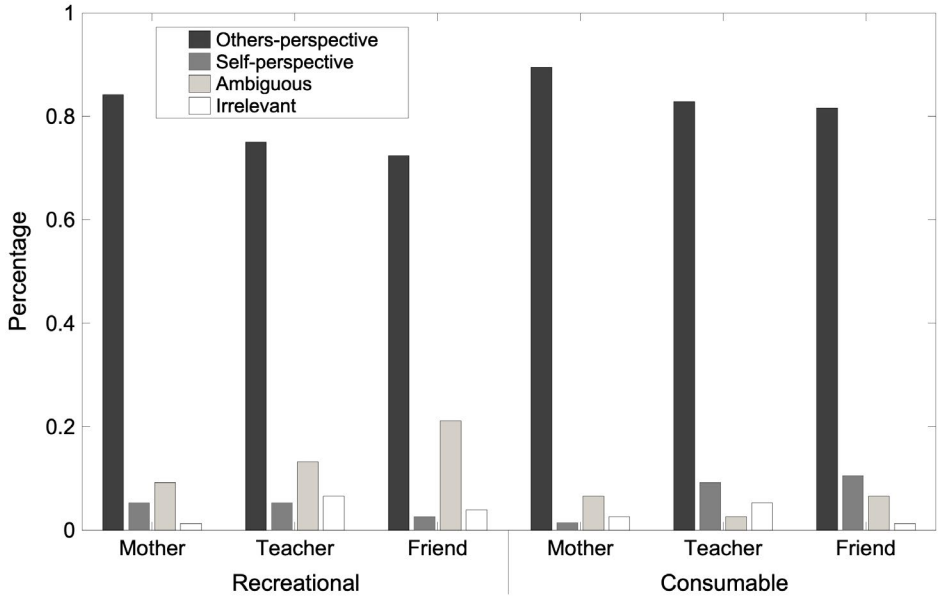

FIGURE 4 Percentage of each justification category, by gift-recipient, for each gift type in Experiment 2

(t = 4.43, p = .00), consistent with other findings of advanced EF task performance in Chinese children (Guan & Farrar, 2016; Sabbagh et al., 2006).

3.3 | Discussion

In Experiment 2 girls made more perspective-taking gift-choices, but not justifications, than boys. One interpretation is that girls were more reflective or controlled in their choices than boys. This is consistent with a finding

TABLE 3 Children's performance in the tapping task and the delay of gratification task

	Tapping game: Mean correct trials (*SD*)	Delay of gratification: Mean waiting time (sec) (*SD*)
3-year olds	7.3 (3.7)	364.4 (261.6)
4-year olds	10.1 (3.3)	444.3 (223.4)
5-year olds	11.7 (0.8)	505.5 (164.3)

Note: Tapping range: 0–12 correct. Delay of gratification range: 0–600 s.

that women had better knowledge when choosing Christmas gifts for others, whereas men tended to ask for help (Cleveland, Babin, Laroche, Ward, & Bergeron, 2003). It is also consistent with evidence that gender differences in empathy, when found in children or adults, tend to favor women (e.g., Eisenberg & Lennon, 1983). However, it is possible that the effect reflects sampling error, given that no gender differences were found either in Experiment 1 or in Atance et al.'s (2010) both experiments, or in previous studies of children's prosocial perspective-taking (e.g., Block, 1976; Maccoby & Jacklin, 1974). Considering the number of previous negative results, this single gender difference might be Type I error. Alternately, there might be a gender-by-culture interaction in the development of perspective-taking. In any event, without replication the current finding does not warrant any strong conclusion about gender differences.

Five-year olds made more perspective-taking gift-choices than 3-year olds, suggesting age-related improvement in gift-giving perspective-taking. Atance et al. (2010) reported a similar age difference. This is consistent with our speculation that the age trend in Experiment 1 was attenuated by our selection criteria (see Table 1): the more refined procedure in Experiment 2, including increased statistical power (i.e., more test items per participant) and recipient-specific gift options, might have increased sensitivity to age differences.

The absence of any desire fulfillment effect (or trend) in either gift choices or justifications in Experiment 2 replicates the results of Experiment 1: the effect does not generalize to Chinese preschool children. Furthermore, performance in two inhibition tests did not reliably correlate with variance in gift-giving perspective-taking. This cannot be explained by ceiling effects in perspective-taking. Notably, the null correlation between EFs and perspective-taking is consistent with findings from preschool children in Korea (Oh & Lewis, 2008), Japan (Lewis et al., 2009), and China (Lewis, Huang, & Rooksby, 2006), but differs from reports that Western children show a positive correlation between EF and theory of mind (Carlson & Moses, 2001; Perner, Lang, & Kloo, 2002).

Children made more perspective-taking justifications for consumable than recreational gift choices. This partly replicates results from Experiment 1 and extends them to a within-subjects design that included more diverse gift items. This suggests a moderately consistent effect. Although the effect might be due to children's greater knowledge about subjective food preferences, it might not fully explain the effect because the design controlled for children's knowledge of recipients' preferences for both types of items. Another possibility is that children believe individuals have varied personal preferences for consumables (e.g., some adults like spicy food; others do not), but are uncertain about the variability of adults' preferences for recreational items. The latter preferences might be less salient to children: for example, although they presumably see adults attending to smartphones, televisions, and books or magazines, they might not recognize individual adults' preferences for specific apps, programs, genres, or authors. Thus, even if children know what kinds of recreational objects adults generally like, they might be less certain about individual adults' personal preferences. A related possibility is that children believe adults have strong individual preferences for food/drinks but only weak preferences for recreational items. This would make recreational gift choices seem less consequential. These possibilities raise numerous questions for future research about how children represent other people's desires or preferences of different kinds of objects, and how they come to acquire those representations.

4 | GENERAL DISCUSSION

The present study explored Chinese preschoolers' Level 2 perspective-taking in choosing gifts. We did not find consistent age-related changes: Experiment 2 revealed an age difference consistent with Atance et al. (2010) and other reports: 5-year old children made more perspective-taking responses than 3-year olds; 4-year olds were not reliably different from either group. The non-significant age trend in Experiment 1 was likely attenuated by our exclusion criteria (i.e., accurately classifying age-appropriate objects; choosing age-appropriate items for themselves), which eliminated a higher proportion of 3-year olds. It is possible that age differences in previous studies were partly due to two confounding factors: (a) younger children's limited knowledge of others' preferences (i.e., Level 1 or knowledge-based errors), and (b) gift-choices that did not actually impose a conflict between the child's and recipient's preferences. However, even if these confounds partly explain previously reported age differences, Experiment 2 shows that with those factors controlled, perspective-taking for gift choices is still better in 5-year olds than in 3-year olds.

Prior desire fulfillment did not improve Chinese children's perspective-taking in either gift choices or justifications. This result is inconsistent with Atance et al.'s (2010) findings with Canadian children. The discrepancy might indicate a cross-cultural difference in perspective-taking development, possibly due to differences in sociocultural factors (Greenfield et al., 2003; Luk et al., 2012; Wu & Keysar, 2007).

Our results revealed a novel finding that children more readily took others' perspective with consumable gifts than recreational gifts. This was true for gift choices and justifications in Experiment 1, but was reliable only for justifications, not choices, in Experiment 2. This partial inconsistency might have been due to the inclusion of socially constrained items (i.e., beer) in Experiment 1. In Experiment 2 the stimuli were less socially constrained and more personalized with each participant, and this change might have equated task demands for gift choices. Notably, we had mitigated a possible effect of socially constrained items in justifications by classifying reasons related to social norms (e.g., “Beers are for adults”) into the Ambiguous category, which were excluded together with irrelevant or insufficient responses in the statistical analyses. This difference might explain why the effect replicated for justifications but not choices. Replication with different materials is needed to further explore this effect.

4.1 | Limitations and future directions

Because the current study did not include a group of Western children for cross-cultural comparison, the results raise but do not resolve important questions about possible similarities or differences between Chinese and North American or European children's perspective-taking. Future studies therefore should compare matched samples of children from several different cultures (e.g., House et al., 2013). Such an effort could explore, for example, cultural variability in social-cognitive skills, and linguistic and pragmatic factors that might influence perspective-taking.

The inclusion of a desire-knowledge pretest in Experiment 2 provided a more precise way to measure children's gift-giving perspective-taking. However, given that children's choices in the pretest were not validated by the recipients, it is possible that children imagined or invented those preferences, making the gift-choice task partly a memory task—that is, recognizing pretest responses to make a consistent choice. Future studies should validate children's pretest responses by asking the gift recipients in order to address this potential limitation.

Another question concerns the nature of gift-type effects. To understand how children choose different gift types, we might consider ethnographic data across cultures. By considering the broader range of normative gifts across cultures (including, among others, consumables, recreational objects, currency, and events.) we might better understand how different gift types elicit more or less perspective-taking. As a simple example, some gifts are likely more conventionalized (e.g., not tailored to recipient preferences), and others more individualized.

4.2 | Conclusions

In two experiments, we found that Chinese preschool children's perspective-taking was not enhanced by initially allowing children to choose a desired item for themselves. Age differences from 3 to 5 years were attenuated by eliminating children who lacked basic knowledge of recipients' preferences. Chinese preschoolers did more perspective-taking when choosing consumable than recreational gifts. Although the current study did not directly compare Chinese and North American preschoolers, it presents an initial in-depth study of Chinese children's gift-giving perspective-taking. The findings provide context for interpreting findings from Western samples, and highlight new questions for future cross-cultural studies of perspective-taking and prosocial development.

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CONFLICT OF INTEREST

The authors declare no potential sources of conflict of interest.

DATA AVAILABILITY STATEMENT

Non-profit researchers who provide a methodologically sound proposal to the corresponding author will be granted access to all available de-identified participant data.

ORCID


Yao Guan https://orcid.org/0000-0001-9276-3491

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